

# ON THE HISTORY AND DISTRIBUTION OF *ATHYSANUS ARGENTARIUS* METCALF (HEM.: CICADELLIDAE) IN BRITAIN

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**Abstract.** In July, 1999, a single specimen of the large cicadellid leaf-hopper *Athysanus argentarius* Metcalf was collected, together with aphids, psyllids and other small insects, at an altitude of approximately 230m above ground level. The circumstances surrounding this unusual event are discussed, together with an account of the history and recent changes in distribution of this species in Britain.

## INTRODUCTION

On 8.vii.1999 a large and apparently unfamiliar cicadellid leaf-hopper was collected at an estimated altitude of 230m with other insects during a period (7.00–13.00 h) of aerial netting carried out by one of us (J.W.C.) and colleagues from the NRI Radar Unit and the Meteorological Research Unit, RAF Cardington, Bedfordshire.

Aerial arthropods were sampled almost continuously for a 10-day period during July 1999 by flying a helium-filled balloon with a fine mesh net (aperture 0.64 m<sup>2</sup>) suspended underneath. The net sampled at approximately 200 m, the height varying slightly with changes in wind speed. This work was part of an ongoing 2 year study using entomological radar to monitor insect movement at height. Netting was used to calibrate the radar data.

The cicadellid was determined by one of us (M.A.S.) as *Athysanus argentarius* Metcalf. It is a large brightly marked species, 7–8 mm in length, with fully developed wings. However, in spite of being fully winged it is not often observed to take flight. Instead, it is able to jump distances in excess of one metre, especially if disturbed. As the great majority of Hemiptera collected at altitude are small, frail species, usually aphids, psyllids and small macropterous delphacids (Chapman, unpublished data), the finding of *A. argentarius* amongst aerial plankton of 200 m over Bedfordshire is extraordinary.

Interest in this species was first aroused in 1956 when the late Lt. Col. C. A. W. Duffield took a series amongst long grass at Sandwich, Kent. Two weeks later he was surprised to find a second colony at Dungeness. Being quite unfamiliar with this leaf-hopper he sent specimens to R. J. Izzard at the Natural History Museum, London. The reply was intriguing. "[*Athysanus argentarius* is] a continental species found in Central and Northern Europe on low plants in damp places and in Siberia and Turkestan." There were at that time no specimens in the National Collection, either from this country or abroad. Lt. Col. Duffield (1957) published his finding with the comment: "It is extraordinary that such a large and conspicuous 'hopper' should have eluded capture before. If it was a new arrival it is equally extraordinary that it should appear in two localities so far apart." Later that year Lt. Col. Duffield discussed this problem with one of us (M.A.S.) and subsequent research (Salmon, 1959) revealed that *A. argentarius* was not new to Britain. In fact, the Revd Thomas A. Marshall had taken it during the middle years of the nineteenth century, although

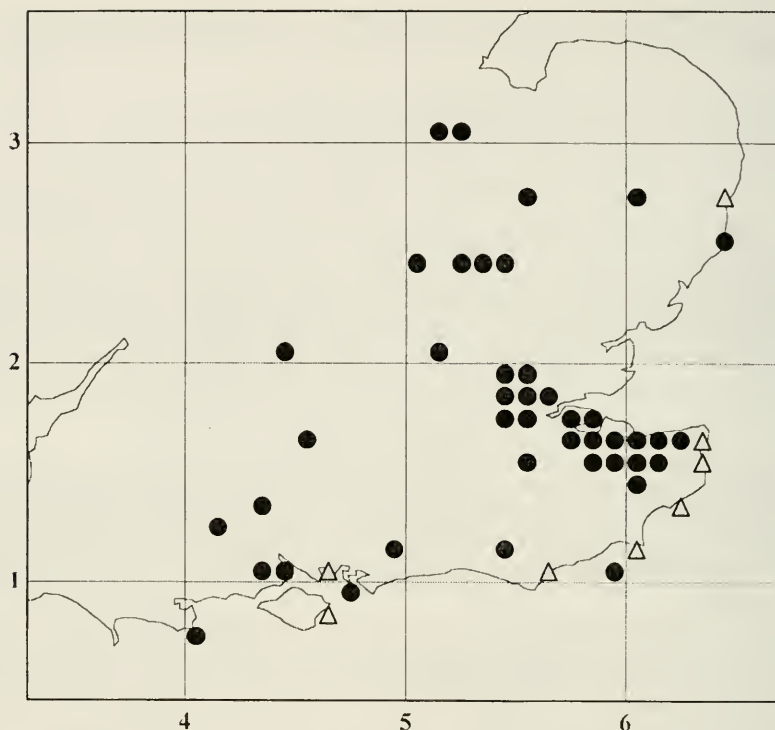


Figure 1. Distribution of *Athysanus argentarius* Metcalf. Triangles refer to records before 1960; circles refer to records from 1960 onwards. Numbers along axes refer to 100-km intervals on the National Grid.

his published account (Marshall, 1866) had apparently been overlooked or ignored by all subsequent workers. Today, this seems surprising as his record appeared in the *Entomologist's Monthly Magazine*, the journal most likely to have been read at that time by those interested in the Hemiptera. It is just as surprising to learn that Marshall had *also* found his specimens at Sandwich. "Apparently an unusual species in this country, but once taken by me in abundance on water plants growing in a shallow pond by the side of the road from Ramsgate to Sandwich, in September."

Since 1956 *A. argentarius* has been recorded more widely and appears to be increasing its range and distribution (Stewart, 1999). A similar increase has been reported also from Denmark (Kristensen, 1965). Twenty-five years ago all British records were from coastal and estuarine marshes, but recent findings indicate that *A. argentarius* has spread inland and can be found on grassland as well as palustrine biotopes. In continental Europe it inhabits damp meadows and clover fields (Vilbaste, 1974). The present distribution includes: Suffolk: Walberswick (H. W. Daltry, 1956). Snape Warren (P. Kirby, 1984); Essex: Epping Forest (J. H. Bratton, 1985). Roding Valley (M. Hanson, 1985). Mucking Heath (P. R. Harvey, 1990). Colne Estuary NNR (P. Kirby, 1997), South Weald Country Park (P. Kirby, 1988). Goldhanger (P. Kirby, 1986); Kent: Sandwich and Dungeness (C. A. W. Duffield,

1956). Ridham Marsh (P. Kirby, 1990); Sussex: Pevensey Bay (W. J. Le Quesne, 1957); Hampshire: Portchester (W. J. Le Quesne, 1957), Leckford (M. A. Salmon, 1998); Isle of Wight: St Helens (W. J. Le Quesne, 1965); Wiltshire: Charlton All Saints (M. A. Salmon, 1999); Berkshire: Chamberhouse Farm (P. Kirby, 1997); Bedfordshire: Sandy Heath (P. Kirby, 1996); Cambridgeshire: Fowlmere (A. J. A. Stewart), Wicken Fen (P. J. Hodge), Shepreth L-Moor (P. Kirby, 1987); Oxfordshire: Wytham Wood (M. R. Wilson, 1998); Hertfordshire: Bricket Wood and Broxbourne (A. J. A. Stewart); Northamptonshire: Castor Hanglands NNR (P. Kirby, 1999), Dogsthorpe (P. Kirby, 1998). The present aerial record from Cardington, Bedfordshire is unique. It suggests that *A. argentarius* is not only capable of flight but may have a migratory behaviour that facilitates long-range wind-borne dispersal at altitude, as indicated by our finding. However, it was not noted in the extensive survey in France reported by della Giustina & Balasse (1999).

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